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July 30, 2004

VIA FACSIMILE & REGISTERED MAIL

European Patent Office
D-80298 Munich
Germany

Attention: Examiner G. Attalla

Dear Sir/Madam:

Re: PCT Application No. PCT/CA 03/01054
Applicant: Polymer Sheet Applications et al.
Title: ORIENTED COMPOSITE THERMOPLASTIC MATERIAL WITH REACTIVE FILLER
Our Reference: T8467160WO

RESPONSE TO WRITTEN OPINION

This is in response to the Written Opinion dated April 30, 2004 in the above case.

AMENDMENTS

Please replace claim page 17 with new claim page 17, enclosed herewith.

REMARKS

Re item V:

The Examiner states that in light of the disclosures in documents JP-B-51034414 (D1), JP-A-55091631 (D2) and EP-A-310100 (D3), respectively, the subject matter of claim 1 does not meet the requirements of Art. 33(2) PCT because it is not new. In particular, Examiner states that each of D1, D2 and D3 disclose all the features of claim 1.

Applicant submits that claim 1, as presently amended, is novel over D1, D2 and D3. Amended claim 1 recites a composite structural material comprising:

a highly oriented polymer produced by a drawing process; and,

a particulate filler non-adhering with said highly oriented polymer capable of reacting with a fluid to form a cementitious bond;

said filler being present in an amount, and dispersed to a degree, sufficient ~~wherein the amount and degree of dispersion of said filler is such as~~ to form interpenetrating polymer and cementitious networks in said composite material upon reaction of said filler with said fluid.

Applicant submits that none of D1, D2 and D3 alone or in combination disclose the structure as claimed in amended claim 1. D1 and D2 each describe a sheet or film material, which is not a structural material. Further, D1 and D2 do not disclose an interpenetrating polymer and cementitious networks. D3 discloses making a reinforcing fibre from a resin and a filler. The reinforcing fibre is then used with an inorganic binder such as cement.

In contrast, the Applicant's drawing process creates a porous structure that allows water into the structure to hydrate the cement and produce a hydrated cementitious structure inside the oriented polypropylene polymer network.

The Applicant's composite structural material is first formed and then hydrated. It is possible to do this because of the voids formed in the orientation process, which allow the water to penetrate the entire 3-D structure. Without this interpenetrating network, there is no way for water to get to the cement and react with it.

The Applicant submits that the composite material claimed in amended claim 1 is qualitatively and quantitatively different from the materials described in references D1, D2 and D3. The interpenetrating polymer and cementitious networks exhibited in the Applicant's composite structural material is not taught in any one of D1, D2 and D3. As such, the Applicant submits that the invention, as defined in amended claim 1, is novel over D1, D2 and D3.

Dependent Claims 2-9

The Examiner also states that the additional features of claims 2-9 are not patentable.

The Applicant submits that claims 2-9 are directly or indirectly dependent on amended claim 1. As such, relying on the reasons outlined above with regard to amended claim 1, the Applicant submits that the dependent claims are novel over D1, D2 and D3.

Rule 5.1 (a)(ii) PCT

Examiner states that contrary to the requirements of Rule 5.1 (a)(ii) PCT, the relevant background art disclosed in the documents D1, D2 and D3 is not mentioned in the description, nor are these documents identified therein.

The Applicant does not consider the contents of documents D1, D2 and D3 to be relevant to the claimed invention. Accordingly, D1, D2 and D3 are not mentioned in the description.

Art 6 PCT

Examiner states that the expression "Variations may be ... set out below" on page 15, line 20-22 does not comply with the clarity requirements of Art 6 PCT (c.f. PCT/GL/IPE 111-4.3.a).

Applicant submits that the expression is not intended to expand the extent of protection to cover the "spirit" of the invention. The expression further reinforces the sentiment of the previous sentence, which reads that the description of the invention "is intended as illustrative rather than restrictive". No attempt is made to vaguely or imprecisely expand the scope of the claims. Accordingly, the Applicant submits that the expression complies with the clarity requirements of Art 6 PCT (c.f. PCT/GL/IPE 111-4.3.a).

Summary

In summary, the Applicant submits that the invention as claimed in amended claim 1 is novel and inventive. References D1, D2 and D3, alone or in combination, do not disclose a composite structural member that comprises an interpenetrating polymer and cementitious network. Since claims 2-9 depend from claim 1, Applicant submits that they to are novel and inventive.

Applicant further submits that the present application complies with Rule 5.1 (a)(ii) PCT (Applicant does not consider references D1, D2 and D3 to be relevant) and Art 6 PCT (the expression does not vaguely or imprecisely expand the scope of the claims).

Respectfully submitted,

Gowling Lafleur Henderson LLP

Agents for the Applicant

Peter Milne
PM/rm
Enclosure

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Claims:

1. A composite structural material comprising:

a highly oriented polymer produced by a drawing process; and,

a particulate filler non-adhering with said highly oriented polymer capable of reacting with a fluid to form a cementitious bond;

said filler being present in an amount, and dispersed to a degree, sufficient to form interpenetrating polymer and cementitious networks in said composite material upon reaction of said filler with said fluid.

2. The composite material as claimed in clam 1 wherein:

said particulate filler is a member selected from the group consisting of silicate cements and gypsum.

3. The composite material of claim 2 wherein:

said particulate filler includes at least one of Portland cement and calcium sulphate hemi-hydrate.

4. The composite material of claim 3 wherein said particulate filler further includes a non-reactive component.

5. The composite material of claim 4 wherein said non-reactive component is wood sawdust.

6. The composite material of claim 1 wherein the drawing process is a die drawing process.

7. The composite material of claim 1 wherein the drawing process is a free drawing process.

8. The composite material of claim 3 wherein the weight ratio of Portland cement to oriented polymer is between 37.5 wt.% and 67.5 wt.%.